



KONICA MINOLTA

SERVICE MANUAL





FIELD SERVICE

NC-502

After publication of this service manual, the parts and mechanism may be subject to change for improvement of their performance.
Therefore, the descriptions given in this service manual may not coincide with the actual machine.

When any change has been made to the descriptions in the service manual, a revised version will be issued with a revision mark added as required.

Revision mark:

- To indicate clearly a section revised, show  to the left of the revised section.
A number within  represents the number of times the revision has been made.
- To indicate clearly a section revised, show  in the lower outside section of the corresponding page.
A number within  represents the number of times the revision has been made.

NOTE

Revision marks shown in a page are restricted only to the latest ones with the old ones deleted.

- When a page revised in Ver. 2.0 has been changed in Ver. 3.0:
The revision marks for Ver. 3.0 only are shown with those for Ver. 2.0 deleted.
- When a page revised in Ver. 2.0 has not been changed in Ver. 3.0:
The revision marks for Ver. 2.0 are left as they are.

2005/04	1.0	—	Issue of the first edition
Date	Service manual Ver.	Revision mark	Descriptions of revision

CONTENTS

General

1.	Product specifications	1
2.	Data Flow Diagram.....	1
2.1	Data Flow Diagram for Network GDI Printing	1
2.2	Electrical Components.....	2
2.2.1	Network Interface Card	2
2.2.2	LED status display list	3

Maintenance

3.	Firmware upgrade	5
3.1	Firmware rewriting	5
3.1.1	Updating method.....	5
4.	Other	8
4.1	Disassembly/Adjustment prohibited items	8
4.2	Disassembly/Assembly procedure.....	9
4.2.1	Network Interface Card	9

Adjustment/Setting

5.	How to use the adjustment section	11
6.	Utility Mode	12
6.1	Utility Mode function tree	12
6.2	Utility Mode function setting procedure.....	14
6.2.1	Procedure	14
6.2.2	Exiting	14
6.2.3	Changing the setting value in Utility Mode functions.....	14
6.3	Setting in the Utility Mode	14
6.3.1	Network setting	14

Troubleshooting

7.	Troubleshooting	17
7.1	Troubleshooting Procedure Overview	17
7.2	Troubleshooting Procedure Chart.....	17
7.3	Action Taken if Network Print Cannot be Done.....	18

NC-502

General

Maintenance

Adjustment / Setting

Troubleshooting

Blank page

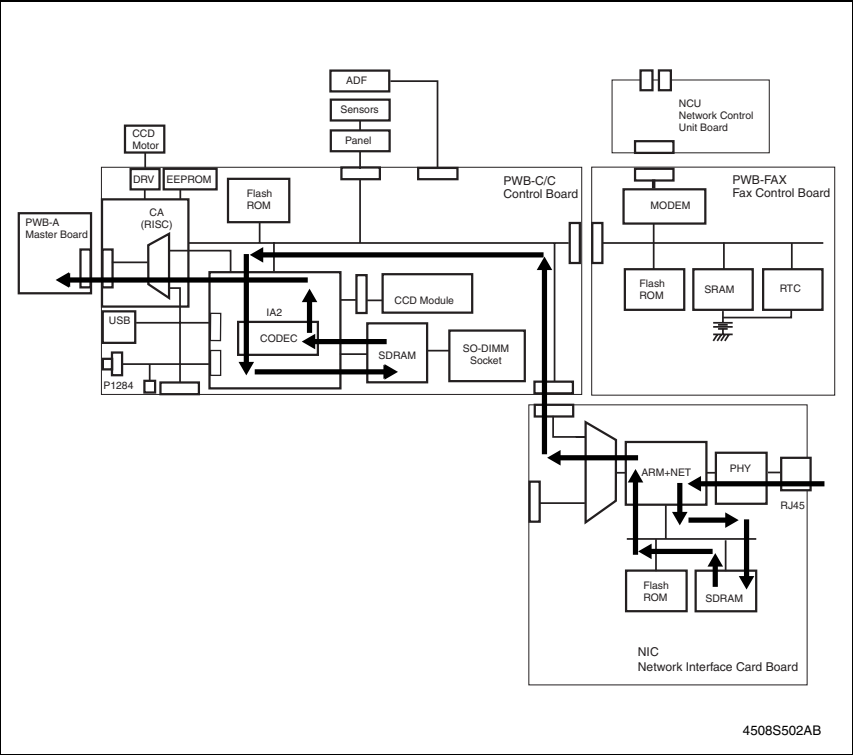
General

1. Product specifications

Name	Network Interface Card (NC-502)
Interface	Ethernet 10/100Base T /TX (RJ-45)
TCP/IP Service	ARP, BootP, DHCP, IPP, lpr/lpd, Raw Socket, HTTPd1.1, SLP, AutoIP
Netware Services	Bindery, NDS, PServer mode, NPrinter mode, NDPS Frame Type (802.3, 802.2, 802.3 SNAP, Ethernet-II, Auto Detect)

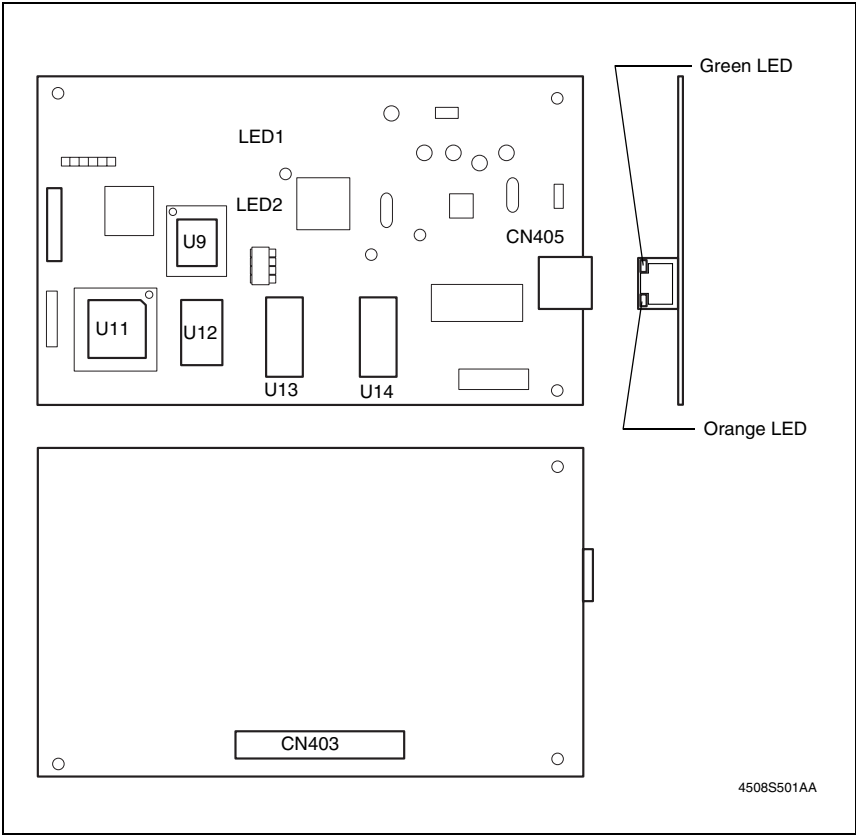
2. Data Flow Diagram

2.1 Data Flow Diagram for Network GDI Printing



2.2 Electrical Components

2.2.1 Network Interface Card



U11	Internet Fax & Network Scan Kit
U9	Parameter Chip
U12	FlashROM
U13	SDRAM
U14	SDRAM
CN405	Network Interface
Green LED	Network Interface Card status display.
Orange LED	Network Interface Card status display.
P403	Hookup Connector (to PWB-C/C)

2.2.2 LED status display list

LEDs		Status
Green LED (Green)	ON	This is lit when the network cable is connected correctly. If this LED is not lit, check the connection again, even if the copier appears to be connected correctly. If this LED is not lit when both ends are connected correctly, the network cable may be damaged.
Orange LED (Orange)	ON	This LED blinks when data is being transfered.

NC-502

General

Blank page

Maintenance

3. Firmware upgrade

3.1 Firmware rewriting

3.1.1 Updating method

1. Connect the Network Interface Card and PC with the network by using the RJ45 network cables.
2. Start up the [MS-DOS prompt] or [Command prompt] of PC.
3. Input "ftp", and then input the [IP address].
C:\>ftp XXX.XXX.XXX.XXX

NOTE

Confirm with the user's system administrator or network administrator on the IP address.

4. Press the "Enter" key.
5. Check that the following message is displayed, and that the PC has been connected with the Network Interface Card.
Connected to XXX.XXX.XXX.XXX
220_NET+ARM_FTP_SERVER_1.0_ready
USER(XXX.XXX.XXX.XXX:(none)):
6. Press the "Enter" key.

NOTE

In case of using the Windows XP or Windows 2003 Server, type "(none)" and press the Enter key.

USER(XXX.XXX.XXX.XXX:(none)):(none)

7. Check that the following message is displayed, and that you could log on to the Network Interface Card through the PC.
230_User_none_logged_in.
8. Input "bin". (Data transfer is switched to the binary mode.)
9. Press the "Enter" key.
ftp>bin
10. The following messages is displayed.
200_Type_set_to_I.
11. Type "put" and then the location and name of the update file.
ftp>put X:\XXX.bin
12. Press the "Enter" key. (Wait to a while until data transfer is completed.)
13. Check that the following message is displayed, and data has been properly transferred to the Network Interface Card from the PC.
200_PORT_command_OK
150_About_to_open_data_connection.
226_Transfer_complete.
ftp: xxxbytes_sent_in_xxxSeconds_xxKbytes/sec.
14. Type "get flash" and press the Enter key. (Wait to a while until data transfer is completed.)
ftp>get flash

15. The following messages will appear.

200_PORT_command_OK

150_About_to_open_data_connection.

226_Transfer_complete

ftp: xxxbytes_received_in_xxxSeconds_xxKbytes/sec.

16. Input "quit", and then press the "Enter" key.

ftp>quit

221 Goodbye.

17. Input "type flash".

C:\>type flash

18. Check that the firmware has been updated properly using the following messages that should appear.

step 1: Command format is correct

step 2: Program's header is right

step 4: Flash ROM erase OK

step 5: Flash ROM write OK

step 6: Program complete

19. Input "exit", and then press the "Enter" key.

C:\>exit

20. Check that you exit the [MS-DOS prompt] or [Command prompt] of PC.

21. Delete the "flash" file created in drive C of the PC.

22. Press the main power switch for the copier OFF/ON to restart the copier.

```
C:\>ftp XXX.XXX.XXX.XXX
Connected to XXX.XXX.XXX.XXX
220 NET+ARM FTP SERVER X.X ready
Connected to XXX.XXX.XXX.XXX
220 NET+ARM FTP SERVER X.X ready
USER(XXX.XXX.XXX.XXX:(none)):
230 User none logged in.
ftp>bin
200 Type set to I.
ftp>put X:\XXX.bin
200 PORT command OK.
150 About to open data connection.
226 Transfer complete
ftp: xxxbytes sent in xxxSeconds xxxKbytes/sec.
ftp>get flash
200 PORT command OK.
150 About to open data connection.
226 Transfer complete.
ftp: xxxbytes received in xxxSeconds xxxKbytes/sec.
ftp>quit
221 Goodbye

C:\>type flash
step 1 : Command format is correct
step 2 : Program's header is right
step 4 : Flash ROM erase OK
step 5 : Flash ROM write OK
step 6 : Program complete
C:\>exit
```

4. Other

4.1 Disassembly/Adjustment prohibited items

A. Paint-locked Screws

NOTE

- Paint-locked screws show that the assembly or unit secured can only be adjusted or set at the factory and should not be adjusted, set, or removed in the field.

B. Red Painted Screws

NOTES

- When the screws are removed, the red paint is coated on the points where readjustment is required.
- Once the red painted screw is removed or loosened, you should make adjustment. Accordingly check the adjustment items in operation manual and make necessary adjustment. Note that when two or more screws are used on the part in questions, only one representative screw may be marked with red paint.

C. Variable Resistors on Board

NOTE

- Do not turn the variable resistors on boards for which no adjusting instructions are given in Adjustment/Setting.

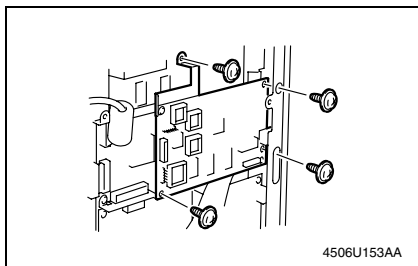
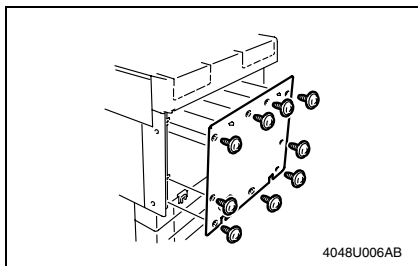
D. Removal of PWBs

NOTES

- When removing a circuit board or other electrical component, refer to “Handling of PWBs” and follow the corresponding removal procedures.
- The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.
- Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.

4.2 Disassembly/Assembly procedure

4.2.1 Network Interface Card



1. Turn OFF the Power Switch and unplug the power cord from the power outlet.
2. Remove the Rear Cover. (9 screws)
3. Remove the four screw, and the Network Interface Card (unplug the hookup connector provided on the backside of the Network I/F Card).

Blank page

Adjustment/Setting

5. How to use the adjustment section

- “Adjustment/Setting” contains detailed information on the adjustment items and procedures for this machine.
- Throughout this “Adjustment/Setting,” the default settings are indicated by “ ”.

A. Advance Checks

- Before attempting to solve the customer problem, the following advance checks must be made. Check to see if:
 1. The power supply voltage meets the specifications.
 2. The power supply is properly grounded.
 3. The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
 4. The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
 5. The original has a problem that may cause a defective image.
 6. The density is properly selected.
 7. The Original Glass, slit glass, or related part is dirty.
 8. Correct paper is being used for printing.
 9. The units, parts, and supplies used for printing (developer, PC Drum, etc.) are properly replenished and replaced when they reach the end of their useful service life.
 10. Toner is not running out.

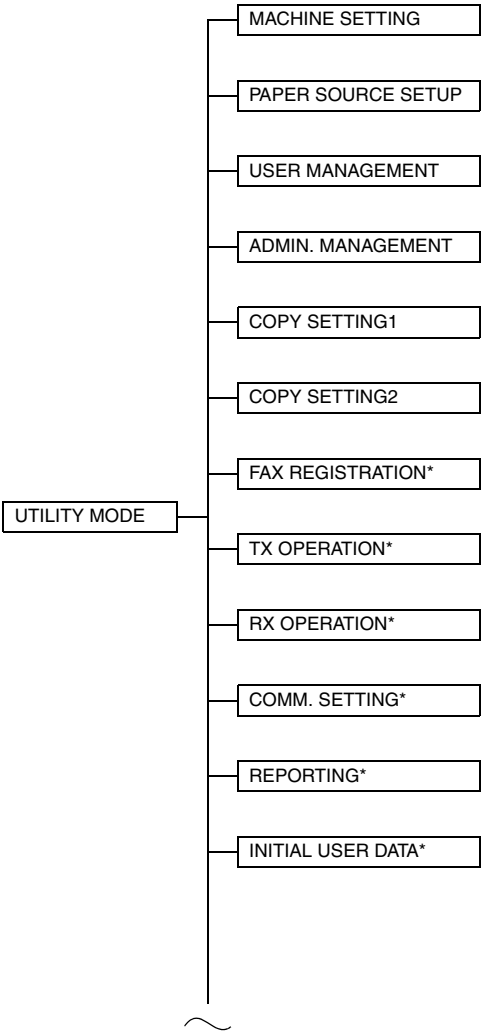
B. Precautions for Service Jobs

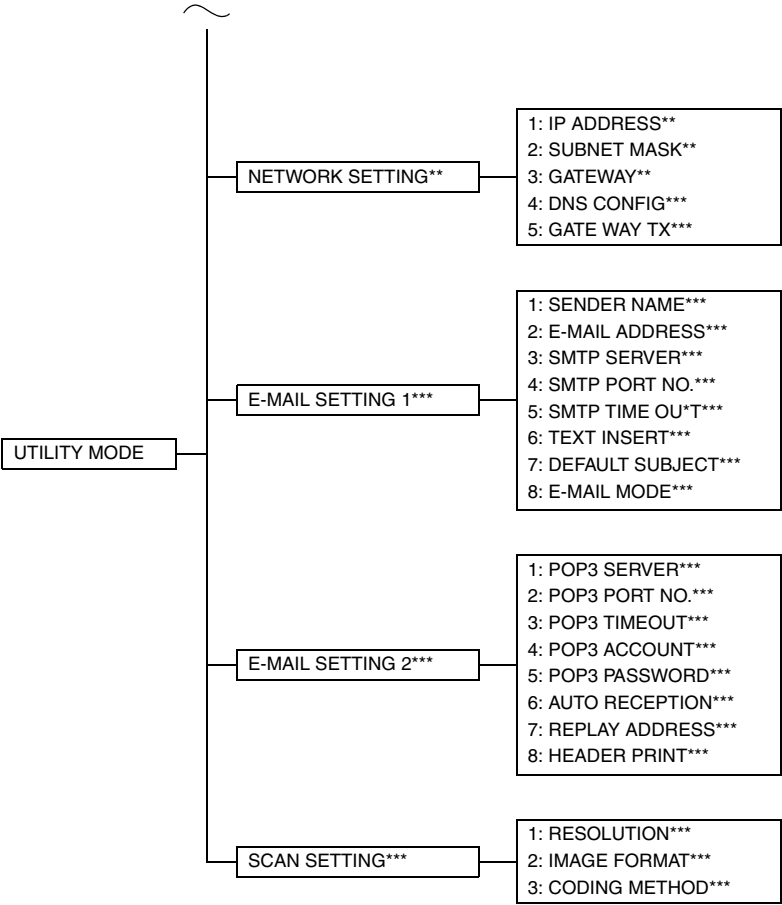
1. To unplug the power cord of the machine before starting the service job procedures.
2. If it is unavoidably necessary to service the machine with its power turned ON, use utmost care not to be caught in the Scanner Cables or gears of the Exposure Unit.
3. Special care should be used when handling the Fusing Unit which can be extremely hot.
4. The Developing Unit has a strong magnetic field. Keep watches and measuring instruments away from it.
5. Take care not to damage the PC Drum with a tool or similar device.
6. Do not touch IC pins with bare hands.

6. Utility Mode

- This mode is used to set various machine functions.

6.1 Utility Mode function tree





*: Available only if the FAX-Kit is installed.

**: Available only if the NIC NC-502 is installed.

***: Available only if the Internet Fax & Network Scan Kit SU-502 is installed.

6.2 Utility Mode function setting procedure

6.2.1 Procedure

1. Press the Utility key.
2. The first Utility mode screen appears.

6.2.2 Exiting

- Press the Panel Reset key.

6.2.3 Changing the setting value in Utility Mode functions

1. Press the ▲ / ▼ key, < / > key or the 10-Key Pad to select the desired function.
2. Press the ▲ / ▼ key, < / > key or the 10-Key Pad to select the desired setting.
3. Press the Yes key to apply the setting.
4. To return to the previous screen, press the No / C key.

6.3 Setting in the Utility Mode

6.3.1 Network settings

- Depending on the network environment in which the machine is located, there may be some restrictions on the network functions that the machine can use. Make the network settings to suit the functions and environment required for customer's location. The network settings can be specified from the control panel or using the administrator mode of PageScope Web Connection.

A. IP ADDRESS

Purpose/Use	This function is used to specify the IP address for the copier.
	<p>NOTE</p> <ul style="list-style-type: none"> • Available only if the NIC NC-502 is installed. • Please consult customer's network administrator for information about the IP address to use.
Setting/ Procedure	<ul style="list-style-type: none"> • The default setting is "AUTO". <div style="text-align: center;"> "AUTO" SPECIFY </div> <ul style="list-style-type: none"> • If AUTO is selected, the IP address is automatically acquired from the DHCP server. <p>NOTE</p> <ul style="list-style-type: none"> • AUTO is only enabled if there is a DHCP server available on the network. • When AUTO is selected, there is no need to set the subnet mask or gateway setting. When using a fixed IP address, IP Address in NVRAM must be selected for PageScope Web Connection. • Select this option from the "TCP/IP Configuration" menu on the "Network" tab. • If SPECIFY is selected, the screen for entering the IP address appears.

B. SUBNET MASK

Purpose/Use	<p>This function is used to specify the subnet mask value for the network.</p> <p>NOTE</p> <ul style="list-style-type: none">• Available only if the NIC NC-502 is installed.• Please consult customer's network administrator for information about the subnet mask to use.
Setting/ Procedure	<ul style="list-style-type: none">• Setting LAN connect to WAN the net mask address. <p>NOTE</p> <ul style="list-style-type: none">• If Auto is selected for "1 IP Address/Auto," the items of "2 Subnet mask" and "3 Gateway" are automatically set. Key entry is therefore disabled for "2 Subnet mask" and "3 Gateway."

C. GATEWAY

Purpose/Use	<p>This function is used to specify the default gateway (IP address) of a router on the network.</p> <p>NOTE</p> <ul style="list-style-type: none">• Available only if the NIC NC-502 is installed.• Please consult customer's network administrator for information about the gateway to use.
Setting/ Procedure	<ul style="list-style-type: none">• Setting LAN address. <p>NOTE</p> <ul style="list-style-type: none">• If Auto is selected for "1 IP Address/Auto," the items of "2 Subnet mask" and "3 Gateway" are automatically set. Key entry is therefore disabled for "2 Subnet mask" and "3 Gateway."

Blank page

Troubleshooting

7. Troubleshooting

7.1 Troubleshooting Procedure Overview

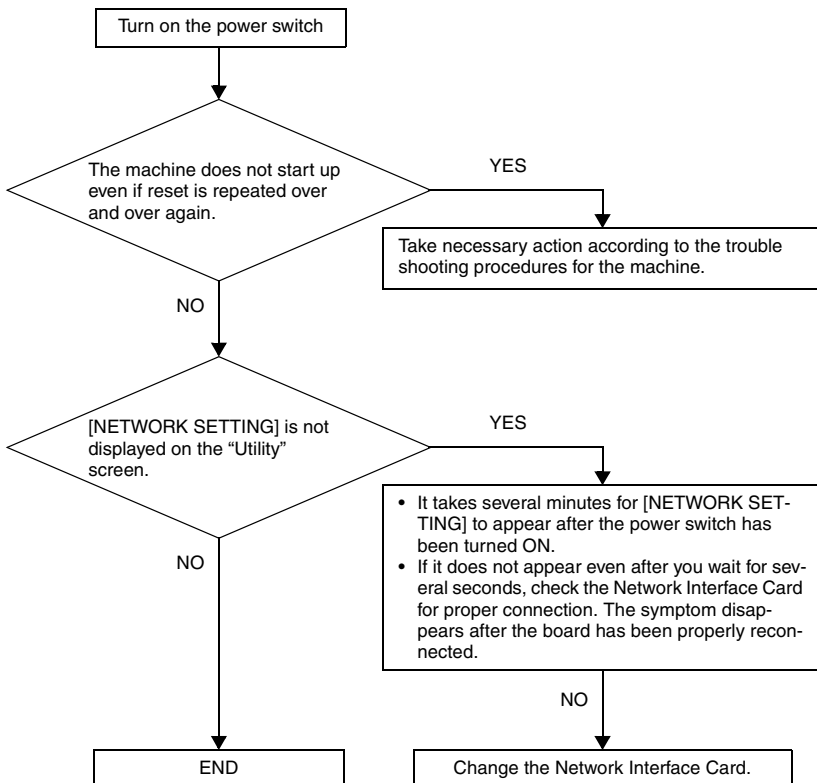
- If the following symptoms occur when the machine is restarted after the Network Interface Card has been mounted, check the board and connectors for proper connection. If the symptom persists, replace the defective part or parts.
- If it is not possible to transfer data correctly with the various settings made on [NETWORK SETTING], the network or telephone line is probably defective.

NOTE

Network setting and line checks should be made by the network administrator (system administrator).

7.2 Troubleshooting Procedure Chart

1. If network settings are not correct, check them by following the flowchart below.



7.3 Action Taken if Network Print Cannot be Done

Step	Check	Result	Possible Cause	Action
1	Has the print job reached the copier?	Yes	A copier error (paper running out, toner, etc.)	Check the copier and correct the cause of the error.
		No	Data is yet to reach the copier.	Go to step 2.
2	Is a response received to ping from the computer to the Network I/F Card?	Yes	A wrong print destination port has been set.	Set the correct port.
			Computer operate erratically only temporarily.	Restart the computer.
			The driver has not been correctly installed.	Follow the correct procedure to uninstall the driver, and then reinstall it correctly.
		No	Computer operates erratically only temporarily.	Restart the computer.
			The network cable is disconnected, or the relay device is faulty.	Make the correct connector connection, or restart or replace the relay device.
			Erroneously set IP address and subnet mask.	Set the correct IP address and subnet mask.